

WHAT IS CLAIMED IS:

1. A semiconductor device, comprising:

a film-like flexible substrate having formed thereon
a wiring pattern;

external connection terminals formed at both end
portions of said flexible substrate; and

a semiconductor element mounted on a surface side of
said flexible substrate,

wherein a folded part, which is folded down in U-
shape to a back surface side of said flexible substrate,
is formed in a fixed state at least at one end portion of
said flexible substrate.

2. A semiconductor device, comprising:

a film-like flexible substrate having formed thereon
a wiring pattern;

external connection terminals formed at both end
portions of said flexible substrate; and

a semiconductor element mounted on a surface side of
said flexible substrate,

wherein a folded part, which is folded down in U-
shape to a back surface side of said flexible substrate,
is formed in a fixed state at least at one end portion of
said flexible substrate in such a manner that said
external connection terminals are connectible to a member

to be connected, which is provided on a side of said semiconductor element so as to face the member to be connected.

3. A semiconductor device, comprising:

a film-like flexible substrate having formed thereon a wiring pattern;

external connection terminals formed at both end portions of said flexible substrate; and

a semiconductor element mounted on a surface side of said flexible substrate,

wherein folded parts, which are folded down in U-shape to a back surface side of said flexible substrate, are formed in a fixed state at both end portions of said flexible substrate, so that said semiconductor device, a member to be connected, and a printed wiring substrate can be mounted in flat on a back surface side of said semiconductor element.

4. The semiconductor device as set forth in claim 1, further comprising:

a spacer provided in a U-shaped structure of said folded part, for fixing the U-shaped structure.

5. The semiconductor device as set forth in claim 4,

wherein:

said spacer is an adhesive tape or an adhesive agent.

6. The semiconductor device as set forth in claim 1, wherein:

said flexible substrate is made of polyimide series resin, and is formed in thickness of not more than 40 μm .

7. A liquid crystal module, comprising:

said semiconductor device of claim 1;

a liquid crystal panel as a member to be connected;

and

a printed wiring substrate,

wherein one of said external connection terminals of said semiconductor device is connected to said liquid crystal panel, while an other of said external connection terminals is connected to said printed wiring substrate.

8. The liquid crystal module as set forth in claim 7, wherein:

said flexible substrate is provided so as to have a cross section of substantially S-shape in an inside of a module main body.

9. The liquid crystal module as set forth in claim 8, further comprising:

lighting means provided between said liquid crystal panel and said flexible substrate,

wherein said semiconductor element mounted on said flexible substrate is provided so as to face inside of said module main body.

10. A liquid crystal module, comprising:

a semiconductor device, a liquid crystal panel, and a printed wiring substrate which are mounted in flat,

wherein said semiconductor device includes:

a film-like flexible substrate having formed thereon a wiring pattern;

external connection terminals formed at both end portions of said flexible substrate; and

a semiconductor element mounted on a surface side of said flexible substrate,

wherein a folded part, which is folded down in U-shape to a back surface side of said flexible substrate, is formed in a fixed state at least at one end portion of said flexible substrate.

11. A method of manufacturing a liquid crystal module which comprises i) a semiconductor device, ii) a

liquid crystal panel as a member to be connected and iii) a printed wiring substrate, wherein i) said semiconductor device includes a film-like flexible substrate having formed thereon a wiring pattern, external connection terminals formed at both end portions of said flexible substrate, and a semiconductor element mounted on a surface side of said flexible substrate, and a folded part, which is folded down in U-shape to a back surface side of said flexible substrate, is formed in a fixed state at least at one end portion of said flexible substrate; and one of said external connection terminals is connected to said liquid crystal panel, while an other of said external connection terminals is connected to said printed wiring substrate, said method comprising the steps of:

(a) after bonding a spacer to a back surface of the end portion of said film-like flexible substrate having the wiring pattern formed on the surface thereof, folding the end portion down to the back surface side of said flexible substrate in substantially U-shape and fixing a resulting folded end portion to the spacer; and

(b) after said step (a), connecting the external connection terminals of said flexible substrate to said liquid crystal panel or said printed wiring substrate.

12. A method of manufacturing a liquid crystal module which comprises i) a semiconductor device, ii) a liquid crystal panel as a member to be connected and iii) a printed wiring substrate, wherein i) said semiconductor device includes a film-like flexible substrate having formed thereon a wiring pattern, external connection terminals formed at both end portions of said flexible substrate, and a semiconductor element mounted on a surface side of said flexible substrate, and a folded part, which is folded down in U-shape to a back surface side of said flexible substrate, is formed in a fixed state at least at one end portion of said flexible substrate; and one of said external connection terminals is connected to said liquid crystal panel, while an other of said external connection terminals is connected to said printed wiring substrate, said method comprising the steps of:

i) after slightly folding down an end portion of the film-like flexible substrate having formed thereon the wiring pattern to the back surface side, connecting external connection terminals of said flexible substrate to said liquid crystal panel or said printed wiring substrate; and

ii) after said step i), fixing the end portion of said flexible substrate to a spacer by folding down the

end portion in substantially U-shape to the back surface side after bonding the spacer to the back surface of the end portion of said flexible substrate.

13. A semiconductor device, comprising:

a wiring pattern formed on a surface side of a film-like flexible substrate;

a semiconductor element and external connection terminals which are connected to the wiring pattern,

wherein a folded part, which is folded down to a back surface side of said flexible substrate, is formed in a fixed state at least at one end portion of said flexible substrate.

14. A liquid crystal module, comprising:

a semiconductor device; and

a liquid crystal panel as a member to be connected, wherein said semiconductor device includes:

a wiring pattern formed on a surface side of a film-like flexible substrate;

a semiconductor element and external connection terminals which are connected to the wiring pattern,

wherein a folded part, which is folded down to a back surface side of said flexible substrate, is formed in a fixed state at least at one end portion of said

flexible substrate; and

said external connection terminals are connected to said liquid crystal panel in such a manner that said semiconductor element faces said liquid crystal panel.

15. An electronic equipment, comprising a liquid crystal module which includes:

a semiconductor device;

a liquid crystal panel as a member to be connected;

and

a printed wiring substrate,

wherein said semiconductor device includes:

a film-like flexible substrate having formed thereon a wiring pattern;

external connection terminals formed at both end portions of said flexible substrate; and

a semiconductor element mounted on a surface side of said flexible substrate,

wherein a folded part, which is folded down to a back surface side of said flexible substrate, is formed in a fixed state at least at one end portion of said flexible substrate; and

one of said external connection terminals of said semiconductor device is connected to said liquid crystal panel, while an other of said external connection

- 58 -

terminals is connected to said printed wiring substrate.